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BRUENINGHAUS HYDROMATIK GMBH

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New claims

1. Hydraulic assembly, situated in the housing (2) of
10 which are a continuation bore (3) embodying a first
pressure side (26), a threaded bore (1) embodying a
second pressure side (27), and between the first
pressure side (26) and the second pressure side (27),
15 a nonreturn valve (5) having an external thread (11)
which is formed on a first cylindrical portion (8) of
a cylindrical valve housing (6) and can be screwed
20 into the threaded bore (1),
a passage duct (39) for a hydraulic fluid flow being
formed, between a side wall of the threaded bore (1)
and a first region of material removal (16) of the
25 lateral surface (10) of the cylindrical valve housing
(6), in a plurality of angular segments (α_1 , α_2 , α_3
and α_4) of the valve housing (6),

characterised

in that the first regions of material removal (16) are
25 continued in a second cylindrical portion (9)
adjoining the first cylindrical portion (8) and serve,
with a plurality of second regions of material removal
(17) situated between the first regions of material
removal (16) exclusively in the second cylindrical
30 portion (9), as engagements for a tool for screwing
the nonreturn valve (5) into the threaded bore (1).

2. Hydraulic assembly according to Claim 1,
characterised

in that the cylindrical valve housing (6) comprises
two, three or four equal-sized first regions of
5 material removal (16) formed at equidistant angular
intervals on the lateral surface (10) of the
cylindrical valve housing (6).

10 3. Hydraulic assembly according to Claim 2,
characterised

in that in the second cylindrical portion (9) the two,
three or four second regions of material removal (17),
which are equal in size to the first regions of
material removal (16) are constructed in the angular
15 segments (α_5 , α_6 , α_7 and α_8) of the valve housing (6).

4. Hydraulic assembly according to Claim 3,
characterised

20 in that the first and second regions of material
removal (16, 17) constitute levelled regions and form
a square, hexagonal or octagonal profile for a tool
for screwing the nonreturn valve (5) into the threaded
bore (1).

25 5. Hydraulic assembly according to one of Claims 1 to 4,
characterised

30 in that the threaded bore (1) merges, at the level of
the end, facing towards the first pressure side (26),
of the valve housing (6) screwed fully into the
threaded bore (1), via a transition (4) into a
continuation bore (3), the diameter of which is
designed smaller than the diameter of the threaded
bore (1).

6. Hydraulic assembly according to Claim 5,
characterised
in that the transition (4) has a conical form.

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7. Hydraulic assembly according to Claim 5 or 6,
characterised
in that the hydraulic fluid flow between the valve
housing (6) and the transition (4) between the
10 threaded bore (1) and the continuation bore (3) is
interrupted by the valve housing (6) pressing against
the transition (4).

15 8. Hydraulic assembly according to one of Claims 1 to 7,
characterised
in that the nonreturn valve (5) contains a valve seat
(21) which is formed by a conical transition (40) from
a first portion (19) of smaller inside diameter to a
second portion (20) of larger inside diameter of a
20 cutout (18) of the hollow-cylindrical nonreturn valve
(5).

9. Hydraulic assembly according to Claim 8,
characterised
25 in that the first portion (19) of the cutout (18)
forms a first inflow opening (28) of the nonreturn
valve (5).

30 10. Hydraulic assembly according to Claim 9,
characterised
in that the nonreturn valve (5) has a second opening
(31) at the end of the valve housing (6) opposite the
first inflow opening (28).

11. Hydraulic assembly according to Claim 10,
characterised

5 in that the second portion (20) of the cutout (18) contains a spherical valve body (22) which is pressed against the valve seat (21) by the spring force of a prestressed spring (25) likewise situated in the second portion (20) of the cutout (18) and the pressure difference between the pressure prevailing at 10 the second opening (31) and the pressure prevailing at the first inflow opening (28).

12. Hydraulic assembly according to one of Claims 8 to 11,
characterised

15 in that the hollow-cylindrical nonreturn valve (5) has in the second portion (20) of the cutout (18) a plurality of through-openings (38) which are distributed in equidistant angular segments (β) on a circular line which is concentric with the 20 longitudinal axis (37) of the nonreturn valve (5) and lies on the inner lateral surface of the valve housing (6), these through-openings opening into a region (39) of the second pressure side (27) of the threaded bore (1), which region is situated on the side of the first 25 cylindrical portion (8) facing towards the first pressure side (26).

13. Hydraulic assembly according to Claim 11,
characterised

30 in that the spring (25) is prestressed between a first and second spring plate (23, 24).

14. Hydraulic assembly according to Claim 13,
characterised
in that the first and second spring plate (23, 24)
have the same geometry.

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15. Hydraulic assembly according to Claim 13 or 14,
characterised
in that the spring force of the prestressed spring
(25) is transmitted to the valve body (22) via the
10 first spring plate (23).

16. Hydraulic assembly according to one of Claims 13 to
15,
characterised

15 in that the second spring plate (24) is supported
against a snap ring (34) guided in an annular groove
at the inner lateral surface of the hollow-cylindrical
valve housing (6).

20 17. Hydraulic assembly according to one of Claims 13 to
16,
characterised
in that the first and second spring plate (23, 24)
each has an inner bore (32) for supplying the pressure
25 prevailing at the second opening (31) to the valve
body (22).